

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DR. WERNER GROH, MICHAEL SCHOPS
and JORG LEHNERT

Appeal No. 2006-0761
Application 09/619,535¹

ON BRIEF

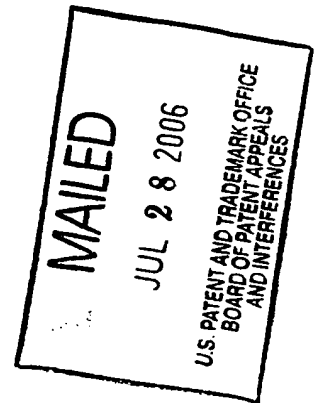
Before PAK, WALTZ and KRATZ, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 10, 12 through 15, 17 and 18. Claims 19 through 21 and 23 through 39 stand withdrawn from consideration by the examiner as being directed to a non-elected invention. Claims 40 through 42, the other remaining claims in the above-identified application, were

¹ Application for patent filed July 19, 2000.



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indicated to be allowable by the examiner.

APPEALED SUBJECT MATTER

Claims 1, 2 and 3 are representative of the subject matter on appeal and read as follows:

1. A laminate that is not subjected to final consideration by a binder, comprising:
at least one non-woven mat containing glass staple fibers pre-consolidated with a resin, and at least one non-woven layer of synthetic fibers, wherein the at least one synthetic non-woven layer and the pre-consolidated non-woven mat containing glass fibers are bounded together by needing such that a portion of the fibers of the synthetic non-woven layer passes through the non-woven layer containing glass fibers and penetrates a side of the layer of glass fibers facing away from the layer of synthetic fibers, and optionally through any underlying synthetic non-woven layer, and wherein the synthetic fibers are heat shrunk and the laminated is binder free.
2. The laminate according to Claim 1, wherein said pre-consolidation resin is selected from the group consisting of urea, acrylate, melamine, phenolic, epoxy, vinyl acetate, polyvinyl alcohol and polyvinyl chloride resins.
3. The laminate according to Claim 1, wherein at least two non-woven layers of heat shrunk synthetic fibers are present and the gsm substance (basis weight) of said layers of synthetic non-woven layers is equal or different.

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REFERENCE

The prior art references relied upon by the examiner in support of the § 103 rejections before us are:

| | | |
|----------------------------|------------|---------------|
| Hiers | RE. 33,023 | Aug. 15, 1989 |
| Heidel et al. (Heidel) | 5,171,629 | Dec. 15, 1992 |
| Baravian et al. (Baravian) | 5,616,395 | Apr. 1, 1997 |

REJECTIONS

The appealed claims stand rejected as follows:

- 1) Claims 1, 3 through 10, 14, 15, 17 and 18 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Baravian and Hiers; and
- 2) Claims 2, 12 and 13 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Baravian, Hiers and Heidel.

OPINION

We have carefully reviewed the claims, specification and prior art, including all of the arguments advanced by both the examiner and the appellants in support of their respective positions. As result of this review, we have made the determinations which follow.

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To establish a prima facie case of obviousness under § 103, there must be some teaching, suggestion and/or motivation in the applied prior art taken as a whole and/or knowledge generally available to a person having ordinary skill in the art, which would have led that person to the claimed invention, without any recourse to the teachings in the appellants' disclosure. See, e.g., Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996). The knowledge generally available to a person having ordinary skill in the art includes facts which are admittedly well known in the art. In re Nomiya, 509 F.2d 566, 570-71, 184 USPQ 607, 611-12 (CCPA 1975) (The admitted prior art in the appellants' specification may be used in determining the patentability of a claimed invention.); see also In re Davis, 305 F.2d 501, 503, 134 USPQ 256, 258 (CCPA 1962).

As acknowledged by the appellants (the Brief, page 4),
Baravian teaches

the preparation of a two layered laminate containing a non-woven synthetic fiber layer and a scrim, grid or cloth composed of mineral fibers which may comprise discontinuous [or continuous] glass fibers. The two layers are bonded together by an adhesive and when the mineral fiber layer is a grid or cloth, needling or

consistent with 37 CFR § 41.37(c)(1)(vii)(2004). The appellants' arguments in the Brief are limited to the groups of claims represented by claims 1, 2 and 3, respectively.

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The appellants contend (id.) that:

[T]he laminates disclosed in Baravian et al. '395 differ from those claimed in present claim 1 at least two aspects: (1) the reference does not disclose needling the layers such that a portion of the synthetic fibers pass entirely through the glass fiber layer and penetrate the surface thereof; and (2) the glass fiber layer in the reference is not disclosed as being pre-consolidated with a resin.

The appellants then assert that these differences would not have been prima facie obvious to one of ordinary skill in the art.

(See the Brief, page 5).

We do not subscribe to the appellants' position. First, as acknowledged by the appellants, Baravian teaches needling at least one non-woven layer of synthetic fibers and at least one non-woven mat containing glass staple fibers. Although Baravian does not mention the degree of bonding or consolidation (i.e., the level of penetration of a portion of fibers of the synthetic non-woven layer in the non-woven mat containing glass fibers), the examiner takes the position that "it is widely known in the art to vary the depth of penetration as function of mechanical strength and composite integrity." (See the Answer, page 4). This position is supported by the appellants' own admission at page 2 of the specification which is provided below:

Similar double-ply laminates are described in

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page 2 of the specification which is provided below:

Similar double-ply laminates are described in South African Document ZA 94/02763 A . . . where a non-woven of glass staple fibers is placed between two filament non-wovens of polyester prestabilized by needling whereupon the three layers are bounded together by a further needling process. The filaments of the polyester non-woven are **drawn through** the non-woven of glass staple fibers. (Emphasis ours).

Thus, we concur with the examiner that it is well within the ambit of one of ordinary skill in the art to optimize a result effective variable (needling to obtain a desired consolidation (penetration)) within the meaning of 35 U.S.C. § 103.

Secondly, as explained by the examiner (the Answer, page 9), Baravian, by virtue of disclosing the preferred form "of a scrim of mineral fibers formed by wet or dry non-woven, more particularly discontinuous glass fibers with chemical or thermal bonding" at column 3, line 66 to column 4, line 1, would have at least suggested the claimed "at least one non-woven mat containing glass staple fibers pre-consolidated with a resin." We also note the appellants' admission at page 1 of the specification which is shown below:

Various laminates fabricated form[s of] at least a non-woven synthetic fibers and non-woven mineral materials are known in the industry . . . [t]he non-woven of man-made fibers and also the non-woven of mineral fibers are preconsolidated and then bound together by needling.

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knowledge of a person having ordinary skill in the art, a person having ordinary skill in the art would have been led to employ known non-woven layers of mineral fibers, including those which are preconsolidated with a resin, to form the laminates of the type discussed in Baravian.

With respect to claims 2, 12 and 13, as properly found by the examiner (the Answer, page 7), Heidel teaches that a non-woven glass fiber mat containing in a carrier laminate for use in roofing or sealing can be preconsolidated in "the customary manner using" polymer binder or melamine resin. (Column 2, lines 15-16). Thus, we concur with the examiner that one of ordinary skill in the art would have been led to employ conventional polymer binders or melamine resins to preconsolidate the non-woven layer of miner fibers of the type discussed in Baravian.

With respect to claims 3, 7 and 8, the appellants argue that Baravian "expressly teaches away from sandwiching the glass fiber layer between organic fiber layers . . ." and therefore, provides no motivation to arrive at the claimed subject matter within the meaning of 35 U.S.C. § 103. (See the Brief, page 5). We agree. As properly pointed by the appellants, Baravian, relied upon by

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the examiner, provides a negative teaching at column 2, lines 10-16, as follows:

The first type of solution, namely, the three-layer reinforcement, is not completely satisfactory . .
.[This] arrangement is exactly to be avoided.

From our perspective, this teaching would have discouraged one of ordinary skill in the art from employing the three-layer laminate recited in claims 3, 7 and 8. See In re Gurley, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994) ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be in a direction divergent from the path that was taken by the applicant . . .").

In view of the foregoing, we affirm the examiner's decision rejecting claims 1, 2, 4 through 6, 9, 10, 12 through 15, 17 and 18 under § 103, but reverse the examiner's decision rejecting claims 3, 7 and 8 under § 103.

OTHER ISSUES

It appears that the known intermediate products described at page 1, lines 19-26, and page 2, lines 18-26, of the specification read on the intermediate products recited in, for example, claims 1 and 3. See Exxon Chem. Patents, Inc., v.

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(1996) ("Consequently, as properly interpreted, Exxon's claims are to a composition that contains the specified ingredients at any time from the moment at which the ingredients are mixed together.").

Moreover, we observe that Greiser (US 5,017,426) referred to in a related Appeal (Appeal No. 2006-1392, Application 10/619,609) teaches a laminate "suitable as a carrier web for roofing and sealing sheets comprises a preconsolidated synthetic fiber web and preconsolidated mineral fiber web which are bonded to each other by needling." See column 1, lines 48-52. Greiser teaches that "[p]referred mineral fiber webs are glass fiber webs . . ." (See column 1, line 66). These "roofing and sealing sheets are usually coated with bitumen on one or both sides, but can also have a coating made from elastomers or plastomers," thus meeting the claimed requirement for one or more layers coated on a glass fiber side of the carrier web. (See column 1, lines 10-15). The dispositive question raised here is, therefore, whether Greiser teaches or would have suggested "part of said organic [synthetic] fibers penetrate through said fiberglass mat and lie adjacent to a side of said fiberglass containing mat that is opposite to said organic non-woven mat" recited in claim 1. On this record, we answer this question in the affirmative.

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is opposite to said organic non-woven mat" recited in claim 1.

On this record, we answer this question in the affirmative.

Greiser teaches (column 2, lines 13-22):

The needling should comprise 10 to 100 stitches/cm², preferably between 20 and 50 stitches/cm². This needling is carried out in such a way that the needles first enter the synthetic fiber web and then penetrate through the material fiber web underneath. The depth of a stitch naturally depends on the thickness of the webs. It is between 6 and 11 mm and leads to a strong positive join of the synthetic fiber web to the mineral fiber web by means of **synthetic fibers pulled through the latter**. (Emphasis added).

Moreover, we note that in an exemplified embodiment at pages 17 and 18 of the specification, needling the synthetic and mineral fiber webs at 32 stitches/cm², which is within the preferred stitch range taught in Greiser, is said to provide the claimed penetration characteristics. Thus, absent any evidence to the contrary, it is reasonable to infer that Greiser necessarily describes or would have suggested "part of said organic [synthetic] fibers penetrate through said fiberglass mat and lie adjacent to a side of said fiberglass containing mat that is opposite to said organic non-woven mat" as recited in claim 1. Thus, we determine that Greiser describes or would have suggested at least the subject matter as recited in claim 1 within the meaning § 102(b) or 103(a).

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would have rendered the claimed subject matter unpatentable within the meaning of § 102(b) or 103(a) and whether Greiser would have rendered the subject matter of the remaining claims unpatentable within the meaning of § 102(b) or 103(b).

This remand to the examiner pursuant to 37 CFR § 41.50(a)(1) is not made for further consideration of a rejection. Accordingly, 37 CFR § 41.50(a)(2) does not apply.

This application, by virtue of its "special" status, requires an immediate action. See MPEP § 708.01 (item D), Eighth Edition, Rev. 3, August 2005.

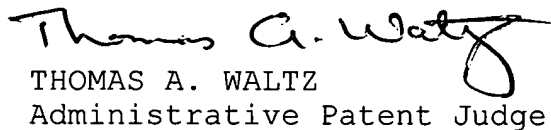
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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR §
1.136(a).

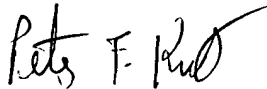
AFFIRED-IN-PART/REMANDED



CHUNG K. PAK
Administrative Patent Judge



THOMAS A. WALTZ
Administrative Patent Judge



PETER F. KRATZ
Administrative Patent Judge

BOARD OF PATENT
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